

Hayes Brake / Delphi Action Item List										
#	Date Opened	Category	OC	Original Due Date	Revised Due Date	Date Closed	Priority	Action Item	Update	Responsible
154	6-Mar-03	ABS	C			17-Apr-03		Prepare vehicle for HD executive ride - rotors, linings, burnish, etc	4/14/03 - Burnish complete 4/3/03 - Parts installed - burnish at TRC 3/20/03 - Confirmed, hardware is at TCB. 2 more sets of hardware should be in Brighton.	Sonnenberg
155	6-Mar-03	ABS	C			17-Apr-03		Replace dampers to 2003 production	4/14/03 - Calibration check-out complete 4/3/03 - Complete - need to check calibrations at TRC. 3/20/03 - Dampers are at TCB. Will be changed - week of 3/24. Direction is to build with '03 dampers, ship bike to test site for the ride, tune for ride with new dampers. 1st week of April in Talladega or last week of April in	Sonnenberg
156	6-Mar-03	ABS	C			1-May-03		Update on DOT 5 test status	5/1/03 - Don't pursue any DOT5 testing - especially if we get 05MY CVO - must be DOT4. 4/17/03 - HD has asked Dow to remove the "not to be used with ABS" label from their containers - H-D's largest concern is ABS at altitude. Can Delphi perform any lab-based tests to duplicate the effects?	Elliott / Georgin
157	12-Mar-03	Manufacturing	C			20-Mar-03		Floor accountability - How do we make sure that manual operations are under control.	3/20/03 - The key to manual operations is standardized work practices. To help the operator, we use visual aids, templates, and gaging wherever possible. If it's a very difficult operation or difficult to detect a non-conforming part, we will add to the process to assist the operator. In the US, we would be more likely to add an automated station. In Mexico, we may add more people.	A. Lee
158	12-Mar-03	Manufacturing	C			17-Apr-03		machine capability details (AIAG ?) - quantity & requirements for run at rate	4/17/03 - Faxed divisional procedure #267 to Russ 3/20/03 · We exceed the AIAG manual guidelines. · We like to use a 5000 piece run for our run-at-rate. · The big challenge is making sure we have castings and customer schedules to support building that many parts (that's why we don't usually have the opportunity to run this at the equipment supplier site)	A. Lee
159	12-Mar-03	Manufacturing	C			6-Jun-03		Snap ring detection (for master cylinders)	5/15/03 - Hayes is already working on something for snap ring detection - will be a part of the Kaizen event on the cartridge m/c. 4/17/03 - Sent Autocad dwg to Russ. Will arrange follow-up discussion with Gary Thompson as required. 3/19/03 - Asked Gary Thompson to collect information to share with Hayes.	J. Elliott
160	12-Mar-03	Supply Chain	C			7-May-03		Supplier quality / supplier management	5/7/03 - Forwarded information to Russ re: Delphi supplier audit format (from supplier portal) 4/23/03 - Message from Eric Bennett (supplier quality) - no regular schedule for audits. 4/22/03 - Left message with Darrell Lewis. 3/12/03 - How often do we assess our suppliers to find out if we are really receiving quality parts. Do we have top 70 type supplier days regular visits, etc	D. Lewis
161	12-Mar-03	ABS	C			2-Dec-03		Deliver FL to Harley for long term on-road demonstration?	10/21/03 - Fulmer put together development plan for 4Q03 and 1Q04. Delphi to deliver Dyna with no outriggers to Hayes by April 1, 2004 7/31/03 - Fulmer and Sonnenberg to determine when we can hand over vehicle w/o outriggers. 5/29/03 - Timing from the point of getting a bike. When can we leave one with Harley 4/3/03 - Sonnenberg/Fulmer to put together	Fulmer / Sonnenberg
162	13-Mar-03	Supply Chain	C			12-Jun-03		Chrome Plating of plastic parts.	5/15/03 - Delphi Energy & Chassis purchasing to check for recommended suppliers. 5/5/03 - Try Titan Plastics. The Account Manager is Barry Miller (248) 334-4142, or mobile (248) 765-2500. (info from Perry Holdsworth) 4/22/03 - Left message for Perry Holdsworth (buyer Delphi-I) looking for more names 3/24/03 - Bill Miller suggests Nathan Forsman	J. Elliott

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163	20-Mar-03	Manufacturing	C			21-May-03		Machining Coolant - process change process	5/5/03 - Spoke to Lisa Fulcomer (Dayton materials group) - We use soluble oil in Dayton - Lisa is not aware of any Delphi locations that are using full synthetic. 4/22/03 - Sent coolant background information to R. Dudan / M. Soik (from Ed Gubbins) 3/20/03 - Coolant information was given to Hayes during the Saltillo trip. This action remains to the	A. Lee
164	20-Mar-03	Motorcycle	C			12-Jun-03		THT Presses - Delphi equipment purchase.	6/12/03 - Close - Buckley question 4/3/03 - J. Layman found that we are having THT Presses to build a machine for specialty casting of suspension parts and calipers. Will try to get more information. 3/20/03 - Hayes wondering if we can share information about a machine we are purchasing from THT Presses (sub-liquidous casting). They saw it	Layman
165	20-Mar-03	ABS	C			17-Apr-03		Determine what facilities are available at Naples	3/20/03 - We plan to check-out the bike in Naples - week of 4/22/03. What is available in terms of garage, tools, hoist, office area? Also, what are the driving requirements (orientation & riding gear)	Dudan / Sonnenberg
166	20-Mar-03	ABS	C			17-Apr-03		Naples, FL - shipping information	4/17/03 - Vehicles arrived 4/3/03 - Sonnenberg to trailer 3 vehicles to Naples. 3/20/03 - How are vehicles going to be shipped to test site. Sonnenberg to check on Pilot cost. Elliott to find out how MR bike is being sent	Sonnenberg / Elliott
167	20-Mar-03	ABS	C					Next demonstration vehicle.	12/4/03 - HB would like to perform benchmark at TRC. (Get data for potential Monster rear program) 10/23/03 - Ducati will return from TRC by 11/26. Outrigger work will begin then. 5/29/03 - Next benchmark bike will be the Ducati ST4. Need to develop test plan and timing. Need New design for outriggers.	Fulmer / Suhre / Ackley
168	3-Apr-03	Motorcycle	C			12-Jun-03		Share information on friction material physical tests for quality assessment.	5/1/03 - Forwarded e-mail from Bill Myers regarding source evaluation. 4/22/03 - Message to Bill Myers	Elliott / Myers
169	3-Apr-03	ABS	C			15-May-03		Send math data and dummy HCU to Harley for packaging	5/15/03 - Modulator was left with Jim Williams - electrical lead for Softail and VRSC. Initial comment is that the HCU is larger than he had expected. 5/13/03 - Math data transferred to Hayes. 5/5/03 - Dan Borgemenke to send to J. Lehner 4/17/03 - Left message for Kari Roth. 4/10/03 - Left modulator with R. Dudan 4/3/03 - Elliott left VME for Georgin	Elliott / Georgin Borgemenke
170	3-Apr-03	ABS	C			12-Jun-03		Next benchmark bike - develop benchmarking plan	6/12/03 - Item closed - tracked under action item number 99. 5/15/03 - Benchmarking will start with the BMW F650CS. Brembo/Bosch system is the biggest threat to Hayes/Delphi. Assume 4 weeks to instrument and equip with outriggers. 1 - 2002 K1200LT boosted, proportional, lean angle 2 - Ducati ST4	Dudan / Sonnenberg
171	10-Apr-03	Manufacturing	C					Value Stream Mapping Follow-up	5/19/04 - May want to look at some of the mfg processes. 9/11/03 - On hold. Need to wait for new date. Working on plant changes before making further process changes. 7/16/03 - Larry Queen (Dayton IE) will support the next Kaizen. 11/10 6/12/03 - Next Harley/Davidson Kaizen is scheduled	J. Elliott

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181	29-May-03	ABS	C			9-Oct-03	
							Russ to get spacer information for wheel bearing study
							9/11/03 - SKF has contacted Hayes about ABS bearings. 7/31/03 - Pfeifenberger to get INA contact name from Connie. 6/12/03 - Integral bearing project is temporarily on hold. No rush for spacer information. 5/29/03 - Looking at integral bearing/sensor design, would like to use spacer as a part of bearing.
182	29-May-03	ABS	C			9-Sep-03	
							BMW outriggers
							7/31/03 - Anyone videotape BMW ABS program on Speedvision? 5/29/03 - According to Tim Abhold, the BMW site shows outriggers. Is there anything to learn here?
183	29-May-03	ABS	C			6-Oct-03	
							Gwyn to kick off EWO - EWO indicates that there is an approved business case and project shows up on product plan - results in HD spending
							10/6/03 - Close - Issue being worked through Delphi sales. 7/31/03 - Bjorn working on this one now. 6/12/03 - H-D is having trouble with Sportster launch (Nissin) - tying up a lot of resources. 5/28/03 - Gwyn to kick off EWO - EWO indicates that there is an approved business case and project shows up on product plan - results in HD spending.
184	29-May-03	ABS	C			12-Jun-03	
							What should next ABS motorcycle be?
							6/3/03 - Delphi to support the following builds: - Update FL (HCU, brake switches) - Build Dyna (supplied by H-D) - Build Ducati ST4s
185	29-May-03	ABS	C			2-Dec-03	
							Which ATV makes sense for ABS build/demo
							12/2/03 - ATV activity will be tracked on business opportunity sheet 10/23/03 - Peter Nelson trying to capture needs and opportunity, then Steve can bring forth business case. 9/9/03 - Steve trying to set up a visit to Arctic Cat and Polaris some time in early October. 6/12/03 - Pfeifenberger and Peter Nelson have
186	29-May-03	Opportunities	C			29-Sep-04	
							What ATV makes sense for development and Demo
							5/6/04 - HB would like to plan an August/September ride event. Need to be ready with demo vehicle. 11/11/03 - Talked to Pete Nelson about right vehicle Polaris Sportsman 500+. Need fluid compliance information for the brakes for valve sizing. 11/6/03 - Decided to build an ATV and tune in Phoenix
187	3-Jun-03	ABS	C			23-Sep-03	
							order (3) 7.4 HCU's for mid-July demo vehicles
							9/22/03 - W. Lloyd has machined bodies to support upcoming builds. 9/9/03 - Have compliance data on the Ducati. Will most likely use the same valve sizes as FL. All future m/c modulators will be plate units anyway. 7/31/03 - Ordered F & R calipers through dealer - W. Lloyd to measure on displacement bench. 6/12/03 - HCU's ordered through A. Mooradian
188	12-Jun-03	Manufacturing	C			9-Sep-03	
							Set up Dayton tour
							7/22/03 - Tour complete - any follow-up questions? 6/12/03 - Topics for Dayton Tour - General - Would like to do review PFMEA & Control Plan then tour facility - How does Delphi monitor cell performance. - Caliper
189	12-Jun-03	Manufacturing	C			11-Sep-03	
							Cold Heading Process
							9/11/03 - Sent some information to Russ. 6/12/03 - Does Delphi have any experience with cold heading operation? Do we purchase any cold-headed components? Hayes looking at the pivot pin on hbmc.
							J. Elliott

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190	12-Jun-03	Motorcycle	C			6-Oct-03		What is Delphi's process to determine master cylinder stroke requirement for an application and what is the test protocol for reserve stroke	10/6/03 - Closed - covered under Action Item 43. 8/20/03 - Share Delphi method in Sept (during design review visit) 6/12/03 - Hayes is assuming 30-33% reserve for DOT4 program (competition is at 27%). Harley specifies after FMVSS and GES test. What conditions does Delphi consider in the DFMEA.	Elliott
191	12-Jun-03	Motorcycle	C			23-Oct-03		What is Delphi's recommendation for a fluid change interval on DOT4 fluid?	10/22/03 - Forwarded message from Jean Cagas to Russ with aged fluid recipe. 10/6/03 - Message to MB Sipniewski, Scott Liest. 9/26/03 - Recipe for 10yr old brake fluid. 6/12/03 - Elliott to find out if Delphi has any guidelines. North American automotive OE's do not specify a change interval - systems are validated for 10yr old fluid thermal performance. We typically see	Elliott
192	12-Jun-03	Motorcycle	C			6-Oct-03		Master cylinder seals - what are the pros/cons of the 2 types. Floating (on the piston face) vs in a groove.	10/6/03 - Closed - covered under Action Item 43. 9/10/03 - Need to add as agenda item during master cylinder design review. 7/30/03 - Our primary seal is the type located on the piston face and has basically evolved from designs in the 1950's with steel cups in front of the seal. The rearward facing seal on the secondary piston is used to keep the secondary cylinder from being	Elliott / Layman
193	12-Jun-03	Motorcycle	C			19-Sep-03		Piston manufacturing	9/19/03 - Per J. Layman, cast pistons on large bore truck applications (37 & 40mm). Everything else machined & anodized. Looking at cold heading. 6/12/03 - Does Delphi do any cast piston designs? What is our piston manufacturing process?	Elliott / Layman
194	12-Jun-03	ABS	C			2-Dec-03		Provide quote for a smaller hydraulic unit.	12/2/03 - Quote provided to H-D - Russ given verbal quote range. 10/23/03 - Need to be kicked off for 2006 by end of November. Volume roadmap will determine whether we do the mini modulator. 10/22/03 - Price and decision date provided to Harley for 2006 program. 9/22/03 - New CCD in the system for the smaller	Elliott / Pfeifenberger
195	22-Jul-03	Manufacturing	C					Share MSD information from the Delphi web site.	5/19/04 - send copy of material to Gene. 2/3/04 - Held training - any follow-up required? 1/15/04 - Ask Eric and Erica about room needs 1/7/04 - Feb 3 confirmed for MSD. Elliott to share travel arrangements. 12/19/03 - 1/21 not good for Erica. Planning on week of 2/2/04 12/15/03 - Targeting Jan 21 as date for MSD	J. Elliott
196	22-Jul-03	Manufacturing	C			6-Oct-03		Lean Equipment Standards / Equipment Philosophy	10/6/03 - Close item, combine with action item #26. 9/11/03 - for specific equipment purchases, how do we develop the requirements? 7/22/03 - Share information on lean equipment standards. Schedule a follow-up conference call to answer any other questions about equipment philosophy.	J. Elliott
197	22-Jul-03	Manufacturing	C			16-Sep-03		Caliper Lube	9/16/03 - The lube that we use on our square seals for assembly is UCON Coating Fluid LB-1145-Y24 (Polyalkylene Glycol Lubricant) It is not compatible with DOT5. 9/11/03 - Share material information with Hayes. 7/22/03 - Does Hayes need any more information on the lube spray process and/or measurement technique?	J. Elliott
198	22-Jul-03	Manufacturing	C			23-Oct-03		Caliper Functional Test	Russ China trip - drag tests with 1/4 turn of the rotor after apply and release 10/23/03 - Sent information to Russ, Matt, Tim, dan 10/9/03 - Hayes interested in off brake noise - any way to test? How much resolution do we have on drag. Can we use the drag bench testing to develop a production test?	J. Elliott

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199	22-Jul-03	Manufacturing	C			23-Oct-03		Production Data Sheets	10/20/03 - Sent to Scott Payne 10/2/03 - Gerardo Casas following up to provide the information. 9/30/03 - Second message to Saltillo. 9/9/03 - Requested information from Saltillo. 7/22/03 - Does Hayes want/need 8.5x11 format for production reports or only interested in the poster-size?	J. Elliott
200	22-Jul-03	Manufacturing	C			9-Sep-03		Master Cylinder Test Parameters	9/9/03 - Cover under manufacturing action item #14 7/22/03 - Hayes would like master cylinder test parameters. Step-by-step test sequence with pressures, durations, and criteria.	J. Elliott / Frank Pirrello
201	28-Jul-03	Motorcycle	C			22-Sep-03		Certification	9/22/03 - E-mailed response from Doty to Bill Jacob. 8/4/03 - Message forwarded to Doty, Myers. 7/28/02 - How does Delphi certify that a new dyno is giving correct data?	Elliott/Doty/Myers
202	20-Aug-03	Supply Chain	C					Friction material pricing	6/21/04 - Sent friction material information to Russ/John/Scott. 6/17/04 - Expect to have an estimate before the end of the month. 6/03/04 - Clarification, HB wants the estimate on their pad with similar material - not a generic Delphi material. 5/19/04 - Ran into some resistance to providing an	J. Elliott
203	4-Sep-03	Technical	O	31-Dec-04	30-Jun-05		M	Robust Engineering Project	3/21 - HB changed the mc force load cell and everything looks good. Proceeding with noise factor study. 3/8 - Shared data with Jim. mc pressure or input force is incorrect. 3/1/05 - Elliott to meet with J. Dimsey to try to determine the source of variation. 2/2/05 - Dimsey and Boon trying to determine the	J. Dimsey
204	11-Sep-03	Manufacturing	C			6-May-04		Receiving Department Best Practice	4/29/04 - Tour complete - action item #46 opened to cover follow-up. 4/7/04 - Plant visit scheduled for 4/29. 3/25/04 - Coopersville, MI - Michelle Gummere is the contact. Can plan tour for about 2 weeks from now. 3/5/04 - Bill has been given the ok to set up a tour. Will communicate date as soon as possible. 2/18/04 - Waiting for a response from Pat Smith.	J. Elliott
205	11-Sep-03	Manufacturing	C			15-Dec-03		Cell Workstation Suppliers	12/2/03 - Sent info from Jeff Geist and Tim Brennaman - recommending Lamb Technicon and ATS. 11/17/03 - Follow-up e-mail to T. Brennaman. 11/10/03 - Sent info from Jim Johnstone (purch) - he recommends ATS (Ontario) and Omega (Dayton) 11/6/03 - HB more interested in flexible solutions since they have lower than automotive volumes.	J. Elliott
206	11-Sep-03	Motorcycle	C			16-Sep-03		Bleeder screws & Inlets	9/16/03 - Sent information from J. Hart & S. Leist 9/11/03 - Share information on torque to seal vs torque to fail and reusability.	Elliott / Hart / Leist
207	11-Sep-03	Motorcycle	C			6-Oct-03		Center comp master cylinder	10/6/03 - Closed - covered under Action Item 43. 9/17/03 - Sent cross section pictures of the Lucas design parts from Europe. Need to follow up with a discussion of the design issues. 9/11/03 - Show Delphi designs (from Europe) - discuss design issues.	Elliott / Layman

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208	11-Sep-03	Motorcycle	C			6-Oct-03		Delphi QTU master cylinder	10/6/03 - Closed - covered under Action Item 43. 9/15/03 - Sent x-section views of the master and the valve detail. 9/11/03 - Share information about how the device works. Need to set up meeting to discuss pros/cons and FMEA issues - compare to HB 2 stage design.	Elliott / Layman
209	11-Sep-03	Motorcycle	C			18-Nov-04		Drag testing	11/11/04 - Sent drag report and data with the anti-rattle springs removed. 10/7/04 - Should be completed within next 2 weeks. 9/16/04 - Waiting for bench tester availability 8/19/04 - Hayes would like to re-run test without anti-rattle springs 8/6/04 - Sent drag comparison plots 6/3/04 - Dave Hayes to follow up getting floating caliper	Elliott / Leist
210	17-Sep-03	ABS	C			8-Mar-04		Develop plan to execute integral bearing/sensor	3/8/04 - Not going to design an integral bearing/sensor. Current design proposal is for existing bearing supplier to integrate encoder on the seal. Use a Delphi active sensor overmolded on the bearing spacer. 1/15/04 - Need bearing spec information from H-D. 1/14/04 - FAG (INA) is preparing to make a future bearing pitch to Hayes next month.	Elliott / McCready
211	26-Sep-03	Manufacturing	C			2-Dec-04		Cartridge machining optimization - Precon	12/2/04 - Close - No response from Dave Tait 11/18/04 - Final message to D. Tait requesting summary report. 3/23/04 - Message to D. Tait to get project summary. 2/19/04 - New program and tooling tried out. Need to schedule PPAP. Dave Tait to follow-up with project summary.	D. Tait
212	26-Sep-03	Motorcycle	C					Design Review	11/12/03 - Held review at Hayes - Elliott to publish summary. (trying to find notes) 11/3/03 - Send meeting announcement with agenda and discussion topics. 10/22/03 - Tim Schlangen, John Layman, and Joe Elliott to attend from Delphi. Need to make agenda - particularly start and stop times. 10/6/03 - Master cylinder design review topics:	Elliott
213	26-Sep-03	ABS	C					Smaller modulator demo	3/9/04 - Vehicle shipped to Hayes. 3/8/04 - Need to ship vehicle back to Hayes. 2/16/04 - D. Nagel working on vehicle build 2/13/04 - Bike arrived in Brighton 1/15/04 - FL will come in February, Softail will be coming in March. 1/5/04 - Russ to send 2 vehicles for mock-up demonstrations (Harley Davidson Softail Classic and another)	Dudan / Pfeifenberger
214	26-Sep-03	ABS	C			7-Oct-04		T-Sport ABS Build activity	9/15/04 - Vehicle delivered to H-D. (Gwyn & Brian Schneider) 8/19/04 - Vehicle in Brighton for de-bug and prep for delivery to H-D. 8/5/04 - Sonnenberg working on performance baselines and robustness 7/11/04 - Demo at TRC 6/15/04 - Fullmar/Sonnenberg at TRC with the Dyna	Sonnenberg / Elliott
215	1-Oct-03	Motorcycle	C			22-Oct-03		Sealing drilled holes in the ABS modulators	10/13/03 - Shared pressed ball diameters and hole sizes with Hayes. 10/8/03 - Sent pressed ball tooling detail to Russ. 10/6/03 - Message to Gary Thompson about ball stake tooling. 10/3/03 - Shared information from prints - hole profile, ball size. Message to Frank Pirrello about sharing tool specifics	Elliott
216	9-Oct-03	Powersports	C	1-Nov-04 11-Mar-05	6-Apr-05		H	MTB hardware for Snowmobile	4/6/05 - Elliott delivered 2nd set to John Thomas. 3/17/05 - Hubar to deliver parts on 3/18. 2/22/05 - B. Hubar (Tapemaster) promised 3/11 delivery date. 2/11/05 - PO sent to Tapemaster. Asked for delivery date. 1/18/05 - HB requesting a second set of hardware 12/16/04 - Design sent to Hayes	J. Elliott

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217	9-Oct-03	Motorcycle	C			23-Oct-03		Wear vs temperature JASO schedule for Dan Haas
								10/23/03 - Sent procedure to Dan & Russ 10/22/03 - JASO C427 - message to Bill Myers to get test procedure.
218	9-Oct-03	Motorcycle	C					SLA Rapid prototypes - who makes them, how do we negotiate contracts. Hayes looking at purchasing 3d printer to shorten lead time
								12/18/03 - Had some machines in large tech centers. Most work is now being sent out. 12/4/03 - Message to Rick Kelrow. Print Center in Flint. 10/23/03 - How much are the operating costs on equipment - 30-40k initial how much money/time every year? 10/22/03 - Delphi purchases SLA parts from a
219	23-Oct-03	Manufacturing	C					Six Sigma Blackbelt training
								4/7/04 - Only course scheduled is transactional course. Mark put us on the list for the next technical class. 3/23/04 - Still trying to talk live to M. Wirth 3/1/04 - Message to Mark Wirth about course availability. 12/18/03 - Trying to get information on upcoming training through Julie Hegwood
220	23-Oct-03	Supply Chain	C			15-Dec-03		Support in Asia
								12/4/03 - Mechanical parts sourced in Shanghai - Warszak to send new name 11/10/03 - Kendrew met with Stanley Wu, was planning to meet with Mee Yoke later in the week. 11/7/03 - Ellen Gu is still the correct contact in China 10/23/03 - Hayes has a new resident in Taiwan Kendrew Sun - Can we set up a conference
221	23-Oct-03	Supply Chain	C			16-Dec-03		Partnering in Asia
								12/18/03 - Closed after conference call with Craig Diem and Kirk Wan. 11/6/03 - Delphi would be interested in discussing any opportunity. Need to get definition on type of product and anticipated volumes. 10/23/03 - Is there any potential to have Delphi assemble Hayes products in China or Mexico? Elliott to follow up with Kirk Wan
222	23-Oct-03	Motorcycle	C			19-Feb-04		What does Delphi do for reliability engineering training.
								1/15/04 - Elliott to forward e-mail from Julie. 1/6/04 - Julie recommends they take a Weibull ++ class. It gets you thinking about how to get data and what to do with it. She also offered to have the new person visit Dayton to get with our engineers for a day or two. 12/18/03 - Asked Julie Hegwood how new employees are trained in her group
223	3-Nov-03	Motorcycle	C					Analyze data for frequency content
								11/5/03 - Sound clip analyzed and sent to Bill.
224	6-Nov-03	Manufacturing	C					Coatings for taps, drills, form tools, etc.
								1/15/04 - Forwarded message from Alex Lee: For carbide drills, mainly TiN (Titanium Nitride - Gold in color) and TiCN (Titanium Carbon Nitride - Grey/Silver in color). For tools such as taper drills which are re-ground more often we usually use a high polish on the flutes instead of coating (over all cost is less even though tool life might not be as good)
225	6-Nov-03	Supply Chain	C			6-May-04		Rhino caliper - Castings with inserts
								3/25/04 - Internet Nanda Gopal 248-267-5105 - brass inserts in die cast past. 3/10/04 - Had discussion about screw threads with Gary Fuls. Need to follow-up with trip to Dayton 2/12/04 - Looking at potential for a pressed insert. 2/5/04 - Now doing tapped cast iron - any lighter alternatives? 1/13/04 - HT will have designer to work with him



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226	6-Nov-03	Supply Chain	C			18-Dec-03		cost differential between mexico and china	12/18/03 - OK for now. May get together later for more questions. 12/16/03 - Held conference call - any follow-up required? 12/15/03 - Conference call with Craig Diem set for 12/16 - 3:30pm EST. 12/3/03 - Sent some notes from discussion with C. Diem. Need to schedule conference call.	J. Elliott / C. Diem
227	6-Nov-03	Motorcycle	C					Noise Training	2/3/04 - Closed - created action item #72 to cover the bicycle study 11/18/04 - Need information on the scope of the work, need the bike/parts/prints - whichever is available. 11/4/04 - Can Delphi and Hayes work together to model the bike/wheel/brake. 10/21/04 - Have noise problem on a bicycle - data by	Elliott / Dudan
228	10-Nov-03	Motorcycle	C					Assembly Lubes Seal retraction vs lubrication Fluid & Lube Compatibility Pushback force / pushout force How applied / how much Testing to validate Lessons learned / warnings	3/25/04 - E-mailed summary to HB. 3/11/04 - Jean to send list 2/5/04 - Follow-up with Jean Cagas 12/4/03 - Sent information from John Hart about the lube interaction 11/10/03 - Sent preliminary information to Bill. Need to follow up with retraction interaction and compatibility.	Elliott / Hart / Cagas
229	1-Dec-03	Motorcycle	C			7-Oct-04		Model a 15 stop fade schedule to help with design iterations	8/20/04 - Sent slides. 8/19/04 - Present information - send plots. - set potential meeting times 6/2/04 - Mike Lee debugging the model. 5/18/04 - Mike working with Gabe Lucas to get math data that matches the vehicle temperature data. 3/23/04 - Data received from TPRL. Mike Lee building a BrakePower model.	Mike Lee
230	1-Dec-03	Motorcycle	C					Does Delphi verify brake fluid performance	12/5/03 - Sent my comments on fluid validation. 12/4/03 - Forwarded response from Jean Cagas. 12/1/03 - Sent question to Dayton materials group.	Elliott
231	4-Dec-03	Manufacturing	C			15-Jan-04		Shainin Red X / Green Y	1/8/04 - Delphi can no longer teach Shainin principles to employees. Need to contact Shainin directly at Shainin.com. 12/18/03 - Trying to get information on upcoming training through Jule Hegwood.	J. Elliott
232	4-Dec-03	Opportunities	C			8-Apr-04		Notes from Hayes November Europe trip - Dudan, Ferrero	3/11/04 - received packages from Ducati & Malaguti. - Triumph interested in ABS - Hayes is expecting to see a quote package in 2004Q1 - new vehicle - cruiser. Triumph has questions about ABS - may need to do a joint trip. - Aprilia - 160,000 vehicles/year - 1/2 motorcycle - interested in ABS - expect to have 40-50% ABS by 2004. 3/11/04 - Item closed, being covered on supply action items.	Dudan
233	12-Jan-04	Opportunities	C			11-Mar-04		Product Catalogues for Delphi brake parts	1/22/04 - Bill Jacob asked Steve Pfeifenberger to quote on 38mm calipers. 1/22/04 - Sent Drum brake, Ambrake, and Delphi caliper photos. 1/21/04 - Sent booster, master cylinder, Delphi caliper portfolios to Russ. Bill	Elliott
234	15-Jan-04	Manufacturing	C			20-Aug-04		Does Delphi have any experience with acme screws in production. What do we use for taps? Any other alternatives?	8/20/04 - Send list of potential sources to Scott Nelson. 8/19/04 - Hayes has found a tool and machine to make the parts. Need to refine the tap slightly. Elliott to send list of possible acme nut sources to Scott Nelson. 8/5/04 - Deadline is past for purchasing equipment - probably need to buy.	J. Elliott

Hayes Brake / Delphi Action Item List										
#	Date Opened	Category	O/C	Original Due Date	Revised Due Date	Date Closed	Priority	Action Item	Update	Responsible
235	15-Jan-04	Motorcycle	C			3-Jun-04		End of line drag test - what is resolution	5/18/04 - The production equipment uses a Lebow torque transducer, part number 1253-105-100. 2/5/04 - Pulled up a copy of the test spec. The equipment resolution is not listed. Need to talk to the ME's.	Elliott / Geist
236	15-Jan-04	Motorcycle	C			20-Feb-04		Is all automotive evac/filled through the master cylinder? - Anyone doing it through the brake?	2/20/04 - Shared CSE training information with Russ and Bill. 2/5/04 - All automotive OE's evac and fill through the master cylinder. Will pull together summary of the process (times and pressures).	Elliott / Zisa
237	15-Jan-04	Motorcycle	C			3-Jun-04		Provide samples of assembly lubes being used right now. Try to get to Hayes prior to the next PTR.	5/6/04 - HB purchased samples for tryout. 3/25/04 - HB will review lube information and determine whether they want samples. 2/5/04 - Waiting for information from Jean Cagas.	Elliott / Cagas
238	15-Jan-04	ABS	C					Schedule data review at Harley after AZ baselines.	3/18/04 - Meeting held at HB. 2/23/04 - Meeting scheduled for 3/18. 2/19/04 - Russ trying to schedule a mid March review with HD to discuss performance, packaging, and DOT5 results.	Elliott / Fulmer / Sonnenberg
239	15-Jan-04	ABS	C			7-Oct-04		Develop test plan for MEOST with complete motorcycle system.	9/16/04 - send schedule overview to Russ. 9/16/04 - Results look good on EH Pump durability. Had some early thermal failures, but later tests had no brush or bearing issues. 8/19/04 - Parts are starting on the accelerated durability - need to get estimated completion date. 6/16/04 - Elliott/Cukovecki/Schwab have a proposal for an accelerated durability test for the mini	Elliott / Stanley / Schwab
240	22-Jan-04	Supply Chain	C					Provide a quote on an Ambrake 38mm caliper.	3/11/04 - Steve sent e-mail with the quoted price. 1/22/04 - Request from Bill Jacob based on product portfolio information.	S. Pfeifferberger
241	5-Feb-04	Manufacturing	C			7-Oct-04		Seal Presence - how do we detect - especially with wipers? Any detection in-line with assembly system?	10/7/04 - Per Scott Payne, there isn't enough reject cost to justify the investment for seal detection. May be a discussion topic during the ME trip to Hayes. 10/5/04 - Jeff Geist is back in the US. Is early November ok for Hayes? 9/16/04 - Gene Andre would prefer the week of 10/11 or 25th	J. Geist
242	5-Feb-04	Manufacturing	C			23-Mar-04		Equipment - unutilized equipment for sale - machining centers and dynos.	3/23/04 - Nothing worth selling is available at this time. Will keep HB in mind if anything becomes available. 2/18/04 - Alex Lee looking will provide a response.	A. Lee
243	5-Feb-04	Manufacturing	C			30-Mar-04		any old used dunnage - tubs? - collapsible - 30x32 or 42x48	3/30/04 - Matt Soik spoke to Al Bulemore. HB is looking for plastic knockdowns. None available. 3/25/04 - Must be able to put on pallet racks. Who is provider/designer of stackable dunnage. AIAG tubs for standard castings. 3/24/04 - Message to Frank West (Saginaw) about available shipping containers 3/2/04 - Sent rotor dunnage example.	J. Elliott

Hayes Brake / Delphi Action Item List								
#	Date Opened	Category	O/C	Original Due Date	Revised Due Date	Date Closed	Priority	Action Item
								Update
								Responsible
244	5-Feb-04	Supply Chain	C					<p>Kitco - going to shut down operations - whats the scoop?</p> <p>6/2/04 - FNOK quoted high to HB, may be too busy with Delphi and other resourcing from Kitco. HB will be moving its product to Florida. Initial plant assessment looked good. Share seal sizes with HB - is there any way to set up a commercial arrangement? License use of our tooling? Primary cups?</p> <p><del>5/6/04 - Most of our parts actually had lower</del></p> <p>J. Elliott / P. Attenweiler</p>
245	11-Feb-04	Supply Chain	C					<p>Provide a quote on a 200x28 L/T drum brake</p> <p>3/11/04 - Pricing went to Bill and Russ. Steve to follow up with an e-mail.</p> <p>2/12/04 - Forwarded request to Pfeifenberger.</p> <p>2/11/04 - Quote request on J-Car drum brakes</p> <p>S. Pfeifenberger</p>
246	18-Feb-04	Supply Chain	C			6-Jan-05		<p>die casting suppliers. Does Delphi have any recommendations?</p> <p>11/9/04 - Delphi provided list of current suppliers for Hayes.</p> <p>10/20/04 - Meeting in Dayton on Nov 9 to discuss.</p> <p>9/16/04 - Elliott to put together a potential agenda</p> <p>9/15/04 - Trying to coordinate a face-to-face meeting in October (Dayton)</p> <p>8/20/04 - Message to Chantima and Tom loanes about how to support Hayes</p> <p>J. Elliott</p>
247	21-Feb-04	Manufacturing	C			3-Aug-04		<p>Can Delphi share any PM strategy/direction with HB</p> <p>6/15/04 - Sent PM information to Russ and Scott</p> <p>6/3/04 - Received information, need to review and send out.</p> <p>6/2/04 - Reminder to Lesia Mahon to send me the file.</p> <p>5/11/04 - Materials are not stocked. QN to send me the file to download.</p> <p>3/25/04 - Ordered Training Materials from the Quality</p> <p>J. Elliott</p>
248	11-Mar-04	Manufacturing	C					<p>Surplus Equipment</p> <p>4/7/04 - Per Russ - there is no longer a big push for used equipment. Elliott to send information as it becomes available.</p> <p>4/1/04 - Trying to get asset lists for plants being closed.</p> <p>3/11/04 - HB looking for a walk-behind fork truck &amp; chip processing equipment.</p> <p>J. Elliott</p>
249	25-Mar-04	Supply Chain	C			6-May-04		<p>Asia Sourcing</p> <p>5/6/04 - Sent notes of Russ.</p> <p>3/31/04 - Dave Fanson's comments: You can't import fasteners any cheaper than you can buy in the US (labor is a small portion of total cost - usually 10% labor cost is the breakpoint)</p> <p>3 companies that look good to us are: Sundrum (India)</p> <p>Taevang Metal (Korea)</p> <p>J. Elliott</p>
250	31-Mar-04	Supply Chain	C			6-May-04		<p>Rubber products</p> <p>4/2/04 - Information from Marcelo Conti - We are looking at Hankook for molded rubber parts. Mostly FNOK for lathe-cut parts.</p> <p>3/31/04 - Dave Fanson sent a message to the commodity team leader for rubber products.</p> <p>J. Elliott</p>
251	8-Apr-04	Manufacturing	C					<p>PBR</p> <p>6/3/04 - PBR is not interested in the offer at this time.</p> <p>6/2/04 - Question forwarded to PBR-Knoxville board of directors (Steve Davey)</p> <p>4/8/04 - Any chance of getting a tour of PBR-Knoxville</p> <p>J. Elliott</p>
252	14-Apr-04	Motorcycle	C			4-Aug-04		<p>Dot 4 evac &amp; fill - any help required?</p> <p>Trials at York and HB lab looked good. Worried about fill level and top-off pressure. Fill process is sending contaminants from the lines to the port timing hole.</p> <p>6/3/04 - Hourglass sight glass shipped sticking up, pushed in after final top off will allow air into the reservoir</p> <p>4/14/04 - running plant trials - 2 issues: overfill to a</p> <p>Ferrero / Haas</p>

Hayes Brake / Delphi Action Item List										
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253	21-Apr-04	Opportunities	C			19-May-04		Does Delphi have a 180mm drum brake?	5/7/04 - Answer to Jerry Dreisewerd - no 180mm brakes still in production. 5/6/04 - Question to Andrew Keller	Elliott
254	29-Apr-04	Manufacturing	C			7-Oct-04		Follow-up questions from Coopersville tour	10/7/04 - Per Scott Payne - HB got enough value from the trip. Don't need to keep this item open any longer. 10/7/04 - Another message to Michelle 8/10/04 - Michelle expects to close out by 8/13 8/5/04 - Asked for an update. 6/2/04 - Shared with Michelle that range and/or % reduction would be acceptable	M. Gummere / J. Elliott
255	29-Apr-04	Manufacturing	C			18-Nov-04		What Does Delphi use for general clean-up in the assembly areas?	11/18/04 - The compatibility test results for the Unikleen product no longer exist. We will not be able to provide Hayes with the results. 10/7/04 - Working to get test results to forward to HB. 9/15/04 - Delphi is using ipax 1223 Unikleen Green. Elliott to follow up with compatibility test results. 4/29/04 - Hayes is using soap to clean up the	Elliott
256	6-May-04	Supply Chain	C			3-Jun-04		Intermet - Blue sand process	5/19/04 - Delphi was looking at a potential knuckle savings of \$1.50. Unfortunately, material properties did not meet our requirements. Not very consistent. HB may have better luck with smaller castings. 5/6/04 - Intermet has told HB that they are very close to production in knuckles for Delphi - 356T6 on an iron sand casting line. Can someone from Delphi	K. Wan
257	6-May-04	ABS	C			18-Nov-04		Should we begin talking about a Triumph ABS or non-Harley-owned Softail competitive build?	10/7/04 - Waiting for HD sourcing decision before proceeding. 8/19/04 - Expect to use for ST4s for benchmarking and lean angle testing. Build to start in October. 6/3/04 Meeting at Ducati went really well last week. 5/19/04 - Ducati - ship vehicle to HB for new rear brake, then back to DPH for ABS build?	Elliott / Dudan / Sonnenberg
258	6-May-04	ABS	C			21-Oct-04		ABS Build	9/30/04 - Vehicle demo to Arctic Cat 9/16/04 - Russ to confirm when we need to be there. Tuesday afternoon 9/28 - vehicle at Mequon. Need some overview slides - 1 slide on m/c, highlight the benefits of ABS, 4-5 slides on ATV. 9/16/04 - Finally have software. Will bleed and tryout vehicle on 9/17. Will do HI-Co and ice calibration in Brighton week of 9/20.	Elliott / Nagel / Read
259	6-May-04	Opportunities	C	4-Apr-05	2-Mar-05		L	Technology Roadmapping Discussion	3/2/05 - Closed. Will re-open a new task is specific action is required. Linked braking - HB needs to scope out their project Electronic braking? - HB trying to get business unit feedback to define market Electric drum brake (for golf cart?) Use some of these concepts for utility vehicle tech demo next year	R. Dudan
260	19-May-04	Manufacturing	C			3-Aug-04		What do we use for PM software in the plants	6/15/04 - Delphi and GM use Maximo asset management software.	J. Elliott
261	19-May-04	Manufacturing	C			7-Oct-04		Concurrent Engineering Processes - Program management	10/7/04 - Covered under H-D action items #63. 9/16 - Hayes more interested in refreshing program management process. What other tools are in the toolbox (DES). 9/15/04 - Jim Waters is the Brighton expert in SBCE - asked him for guidance. 8/20/04 - Rick not aware of training class. Will look into it.	J. Elliott / R. Foster

Hayes Brake / Delphi Action Item List										
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262	19-May-04	Supply Chain	C			7-Oct-04		RFQ - Lightning & cyclone	9/15/04 - Sent Vic Mohile's email to warczak, Nelson. 8/27/04 - Had phone conference with Pam Attenweiler. 8/20/04 - Set up netmeeting with PTL's, John Warczak, Scott Nelson, Pete Nelson, need to confirm Vic and Pam. 8/19/04 - Need to schedule meeting for Friday 8/27	J. Elliott / M. Reder
263	19-May-04	Supply Chain	C			7-Oct-04		Brake hose crimping	10/7/04 - HB is working directly with Harco for quotes and information (not the Delphi funded Harco Brake Systems). 9/16/04 - Can Harco supply other Delphi from the Harco Brake Systems facility 8/26/04 - Had tour and left samples at Harco for estimate. Any follow-up from them yet? 8/19/04 - Confirmed 8/26 date	J. Elliott / B. Cornwell
264	19-May-04	Opportunities	C			17-Aug-04		Trike for disabled veteran	6/2/04 - Sent prop valve cross section views to Jim for reference. 6/1/04 - J. Dimsey message looking for a prop valve. 5/19/04 - HB may need assistance with a trike for a disabled veteran. Foot actuated split system.	
265	25-May-04	ABS	C			15-Sep-04		Functional mini-modulator demo.	7/1/04 - Demo to Hayes on July 1 6/3/04 - Installation on FL started 5/25/04 - Received a functional mini modulator from Dayton.	Sonnenberg
266	3-Jun-04	Supply Chain	C			4-Aug-04		Benefits of the relationship	8/4/04 - This item is covered by items 30-33 from the annual review Need to get agenda out to Russ Rand, Rod, Peter, Ferrero, Warczak by phone. 6/17/04 - Next quarterly review is set for June 30. This topic will be on the agenda. 6/3/04 - John Warczak getting more pressure to look at international sourcing - is there some way that we	J. Elliott / J. Warczak
267	8-Jun-04	Motorcycle	C			5-Aug-04		Rotor direction of rotation - Any effect on noise? A service person has convinced sutton that he has solved noise on the front by swapping rotors. Allman needs support	6/17/04 - Can Greg run with front rotor thickness (0.230 rear, 0.200 front) 6/16/04 - Results indicate very little difference between standard system and reversed rotor. 6/14/04 - Greg Stelzer submitted the job to the server over the weekend. It did not run due to some problem. 6/3/04 - Since we have the models - can we turn	Stelzer
268	17-Jun-04	Opportunities	C			21-Oct-04		Victory conversation	9/16/04 - 4500 vehicles - touring bike, 20% ABS (1500 in 2008, 4000 in 2009, 4500 in 2010) 9/16/04 - Hayes received an RFQ from Polaris - including ABS. 6/17/04 - Pfeilenberger had a cruise control discussion with Polaris for the Victory. They inquired about master cylinders	Dudan / Pfeilenberger
269	30-Jun-04	Manufacturing	O		31-Aug-05		L	Coordinate Manufacturing System Design Workshop	3/17 - Want to push out to 3rd quarter because of Hayes support availability - delay to 9/1. 2/2/05 - Message to Gene asking him to call Erica to discuss specifics of MSD. 1/6/05 - Looking at re-scheduling (Feb 16-17? or week of March 7?) Gene to get back on dates - Focus on overall site planning. Elliott/Hobbs to contact Gene to set agenda (monday after 2:00pm)	G. Andre
270	30-Jun-04	Manufacturing	O		31-Aug-05		L	Manufacturing System Design Tools - DFM/DFA, work cell design	3/17 - Delay to 3rd quarter. 11/18/04 - Best way to share the information is through the MSD workshop. 6/30/04 - Can Delphi offer training to Hayes engineers.	E. Hobbs-Gutberlet

Hayes Brake / Delphi Action Item List										
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271	30-Jun-04	Manufacturing	O		22-Mar-05		L	Problem solving and prevention - Six Sigma, pokeyoke, Red X methodologies, DOE	12/8/04 - What would be most helpful is information on fixtures and devices used for error-proofing? Gene to build a list of needs. 11/18/04 - Working through Jeff Geist to find out what training is available. 6/30/04 - Can Delphi offer training to Hayes engineers.	G. Andre
272	30-Jun-04	Manufacturing	O		17-Mar-05		L	TPM, launch strategy, concurrent engineering, receiving quality/inspection, tooling, tool life, washing, de-burring, pokeyoke, testers/testing	4/18 - Message to Mike Potter. Trying to get Saginaw tour set up. 3/17 - Want to understand Maximo software. HB will be using Datastream. Need some hands-on time on the software application. 3/2/05 - Elliott contacted Saginaw to try to set up a PM visit. 2/2/05 - Jeff Geist working with Gerardo Casas to	J. Elliott
273	30-Jun-04	Manufacturing	O		17-Mar-05		M	Line side reviews @ Hayes	4/20 - Sent comments to Hayes. 4/18 - Follow-up message requesting any information. 3/4 - Osterday will provide assessment by next HB meeting. 3/2/05 - Message to Geist, Hill, Wan, Reder, Osterday soliciting feedback. 12/8/04 - We need to define projects to jointly	J. Geist
274	30-Jun-04	Technical	O		17-Mar-05		M	Reliability testing - Assess Hayes' validation testing - make suggestions for improvements to reduce time and/or improve reliability.	3/17 - Russ would be the preliminary contact - look at week of 4/11. - Sent e-mail to Jule. 3/2/05 - Jule to send someone to HB for 2 days for assessment. 2/2/05 - Message to Jule regarding HB support. Looking at 3 types of testing - EOL, Audit 1/6/05 - Need to meet with Jule Hegwood to develop plan	J. Hegwood
275	8-Dec-04	Manufacturing	O		4-Apr-05		M	End of line testing - Assess Hayes end of line test strategy and develop plan to streamline to reduce test time	3/17 Need to work with Mark Lahti. Trying to address the H-D products - not competitive in the test area. 3/2/05 - Elliott to line up ME support. HB needs to identify a contact	J. Elliott
276	8-Dec-04	Manufacturing	O		4-Apr-05		M	Quality audit testing - Assess Hayes audit testing (components and assemblies) and develop plan to reduce inspections.	3/3 - This item should be focussed on reducing material inspections on the shop floor and incoming inspections.	J. Elliott
277	30-Jun-04	Manufacturing	O		10-Mar-05		M	Caliper machining optimization	3/16/05 - Received analysis results from David Yen - any follow-up required? 2/3/05 - David Yen is waiting for math data - raw casting and finished machined part. 2/2/05 - Call to David to find out if he has the drawings 1/6/05 - Gene to e-mail to David this week. 11/1/05 - David requesting solid model information for	G. Andre
278	30-Jun-04	Motorcycle	C		3-Feb-05		L	Improved product development process	11/11/05 - Sent ADP, TDP, PDP overviews to HB. 12/8/04 - Need to convert training materials to PDF and send to Troy. 11/3/04 - Met with T. Tesmer and T. Abhold to talk about TDP, ADP, PDP. Need to schedule follow-up. 10/20/04 - Have the training material. Need to schedule a session for the next trip to HB. (Nov 3?) 10/7/04 - Need to schedule a review to present the	J. Elliott
279	30-Jun-04	Motorcycle	C		3-Feb-05		L	Determine the best linked approach for both foundation and controlled braking.	2/3/05 - Hayes is working on linked braking approaches. No Delphi assistance required at this time. 10/20/04 - Need an HB contact to work with the Delphi Innovation Center. 9/16/04 - may need to look at prop response - also delphi had some schemes for linking following tech	J. Elliott

Hayes Brake / Delphi Action Item List							
#	Date Opened	Category	O/C	Original Due Date	Revised Due Date	Date Closed	Priority
280	30-Jun-04	Manufacturing	C			2-Feb-05	
							Shainin RedX consulting split into 2 items
							2/2/05 - Closed - divided into action items #65 & 66 get a person to Hayes to present example of a red x project before implementing as a process for future use - overview of problem solving tools (all different tools) - Delphi I&CIM expert/coach. 1/6/04 - All classes are held in Beverly Hills, MI
281	30-Jun-04	Manufacturing	C			18-Nov-04	
							Kaufman rotary dial machines
							11/4/04 - Hill/Geist not able to offer any suggestions on the Kaufman. In the past, we've had some of the issues that Hayes is seeing. For that reason, we no longer buy custom-built machines. We purchase standard Daewoos and Kitamuras. 10/21/04 - is Nov 4 ok for Hayes ME visit? 8/19/04 - Meeting set with Gary for 8/23
282	30-Jun-04	Manufacturing	C			7-Oct-04	
							Functional life requirements / testing strategy for reliability
							10/7/04 - Sent information to Russ. 10/5/04 - Asked Jule for information. 9/16/04 - Is there a job description/overview for reliability eng position 8/19/04 - Mike ready to get training in Dayton - set up date with Jule (4-6 week lead time) 6/30/04 - Can Delphi provide assistance developing functional life requirements / testing strategy for
283	30-Jun-04	Manufacturing	C			7-Oct-04	
							Evaluation of non-conforming parts
							10/7/04 - Forwarded information to Russ. 10/5/04 - Question to Rich Wells. 9/16/04 - Is there any 3d variation in delphi? - Hayes looking at VSA (runs in CATIA) 6/30/04 - Does Delphi do any 3D variation simulation on sub-components of an assembly to look at the effects of component variation issues. Currently, Hayes runs a lot of tests to evaluate out-of-spec
284	30-Jun-04	Manufacturing	C			15-Sep-04	
							Equipment Purchasing
							8/5/04 - Delphi can provide support, need Hayes to submit a proposal 6/30/04 - Can Delphi review equipment proposals, provide price point guidance and supplier recommendations. Particularly in the area of automation / robotics. HB is looking at purchasing a new dyno, can Delphi review the bid package and make recommendations?
285	30-Jun-04	Supply Chain	C			7-Oct-04	
							Cost Analysis
							10/7/04 - Since automotive brake hoses are so much different from motorcycle, there is no desire for Delphi to run a cost analysis. 9/16/04 - Message to Froning asking how he'd like to proceed. 8/23/04 - Need to check with Randy Green about m/c hoses - are they still in Dayton? Rubber source
286	30-Jun-04	Supply Chain	C				
							Brake Lever
							8/10/04 - Will use purchasing Contact to determine best source. Close item and track under item #23. 6/30/04 - HB feels that they pay too much for brake levers - can Delphi help with an assessment?
287	30-Jun-04	Supply Chain	C			6-Jan-05	
							RFQ support
							11/9/04 - Delphi will evaluate Hayes RFQ's to see if there is a potential to reduce cost (via specs) or to give target costs if requested. Hayes needs to keep in mind that our quoting/estimating system is notoriously slow. 10/20/04 - Meeting in Dayton on Nov 9 to discuss. 9/15/04 - Try to set up a meeting in early October (in Dayton)
288	30-Jun-04	Supply Chain	C			18-Nov-04	
							Asia Sourcing Support
							11/9/04 - Shared names of all suppliers that we are using in China for brakes. 10/20/04 - Meeting in Dayton on Nov 9 to discuss. 9/16/04 - send e-mail to scott nelson 9/9/04 - Had phone conversation instead of travel. Need to follow up with Darrell when he's back in the US (Sept 27) 8/23/04 - Requested itinerary from Darrell

Responsible

Elliott / Dudan / Reder

Elliott / Hill

Verbrugge / Hegwood

Warczak / Elliott

Warczak / Elliott

Warczak / Elliott

Lewis / Warczak

Hayes Brake / Delphi Action Item List										
#	Date Opened	Category	O/C	Original Due Date	Revised Due Date	Date Closed	Priority	Action Item	Update	Responsible
289	30-Jun-04	Motorcycle	C					ADAMS Training	6/30/04 - Agreement specifically calls out ADAMS training. Hayes is working to get updated software prior to taking advantage of Rich K's group.	Kowalczyk
290	30-Jun-04	Motorcycle	C			3-Feb-05		Training for a new reliability engineering position at Hayes	2/3/05 - Closed, covered under manufacturing item #56. 10/21/04 - Can Delphi send a reliability engineer to visit HB and make suggestions for improvement. 10/7/04 - Russ to work on making someone available for training in Dayton. 9/15/04 - Looking at late October date (week of 10/18 or 10/25) - OK with Hayes?	Hegwood
291	30-Jun-04	Motorcycle	C			3-Feb-05		Develop a component test strategy to improve confidence in product reliability	2/3/05 - Closed, covered under manufacturing item #56. 10/21/04 - Need a HB contact name for this topic. 10/7/04 - Provide examples of validation plans to compare/contrast. Develop a future test plan. 6/30/04 - Test design - Can we help them develop a component test strategy to improve confidence in product reliability. They like our MEOST concept	Elliott / Ha Dao
292	26-Jul-04	Motorcycle	C			18-Nov-04		Evaluate noise propensity on new Hayes rotor designs	10/25/04 - Sent Shih-Wei's analysis results to Corey. 10/21/04 - Shih-Wei expects to have results by 10/22. 9/16/04 - Requested timing information from Shih-Wei. 9/9/04 - Greg returning to school. Shih-Wei to take over	Kung
293	5-Aug-04	Manufacturing	C					Performance Indicators	10/7/04 - Forwarded to Russ. 9/15/04 - Asked Julie Hatton for the templates. 8/5/04 - Can Delphi share examples of the key performance indicators that are posted on the walls in various tech centers. Also examples of engineering measurements.	Elliott
294	5-Aug-04	Manufacturing	C			7-Oct-04		Cartridge master cylinder optimization	10/7/04 - HB is working out issues through the ME group. Will re-open if required. 8/5/04 - Hayes MBMR project is still having issues getting tooling that works (drawing errors to the tool source). - Russ to set up call to discuss progress with ME's and whether follow-up is required.	Dudan
295	5-Aug-04	Motorcycle	C			18-Nov-04		Phenolic compatibility discussion (fluid, thermal, vibration, etc)	11/11/04 - Sent conference call notes and caliper dimensions. 10/27/04 - Held teleconference with HT and Mike Lee. 10/21/04 - plan on Wed PM (10/27) 10/20/04 - Who are the Hayes contacts for this topic? 10/7/04 - Need to suggest a time to get things kicked	Elliott / Chang
296	10-Sep-04	Opportunities	C			18-Nov-04		Rear wheel unlocker	9/14/04 - Sent information slides on RPC. 9/10/04 - Polaris interested in RWAL-type system for ATV	Dudan / Elliott
297	26-Sep-04	ABS	C					Develop plan to test DOT5 in vehicle	5/19/04 - DOT5 activity on hold. 3/25/04 - FL Done with Level 3 except hi-co. May want to try while Bryan is in desert. 2/11/04 - Mid march tryout of DOT5 is more realistic based on vehicle test plan. 12/18/03 - February - try out DOT5 on vehicle. 10/21/03 - DOT5 will be evaluated on vehicle (FL) as a part of Fulmer's development plan.	Fulmer



Hayes Brake / Delphi Action Item List							
#	Date Opened	Category	O/C	Original Due Date	Revised Due Date	Date Closed	Priority
288	27-Sep-04	Opportunities	C		3-Mar-05	8-Mar-05	L
							Share caliper details for heavy duty off-road application
							3/8 - Pfeifenger supplied ballpark number yesterday. 3/2/05 - Message to Pfeifenger about price. 12/8/04 - Elliott to send 3 calipers (2x51, 2x57, 2x60) Con X in March 3-4 calipers that work for delphi - ballpark cost - (500 1000 per year) 10/6/04 - Send layout drawing of the caliper
289	4-Oct-04	Opportunities	C		17-Mar-05	18-Apr-05	H
							Hayes Trailer Sponsorship
							3/17/05 - Steve Pfeifenger will be shipping the electronics and decals to HB. 3/2/05 - Pfeifenger has the decals. Working to collect the electronics. 2/3/05 - Pfeifenger is ok with XM Radio trying to find decals and speakers for the trailer. 1/5/05 - Pfeifenger is pursuing. 10/21/04 - Monsoon custom 8 YMA
300	7-Oct-04	Technical	C	31-Dec-04	29-Apr-05	18-Apr-05	L
							Schedule Brake Training for both Hayes and Harley-Davidson.
							4/7 - Walker and Elliott presented at HB. 3/14 - Booked travel for Apr 6/7 - Elliott to provide schedule and get course materials made. 3/8 - Asked James if he's still available 3/3 - April 6/7 - 30 people. 3/2/05 - Week of Apr4 is good for James. 1/7/05 - James Walker willing to assist. Need to set a date with HB
301	7-Oct-04	ABS	C		18-Feb-05	18-Feb-05	M
							Demonstrate ABS on an ATV
							2/18/05 - ATV delivered to HB 1/20/05 - Ride at MTS went well with ABS and RPC. Need to try to disable EBS for a better demo. 1/6/04 - ATV will be in Marquette beginning on 1/10 for RPC tuning. 12/8/04 - atv - need to get dates planned with arcticcat and polaris. Need delivery details for the vehicle 11/18/04 - Does HB have a summary of the ride?
302	7-Oct-04	ABS	C		18-Feb-05	18-Feb-05	M
							Demonstrate Snowmobile ABS
							2/18/05 - Snowmobile delivered to HB. 2/3/05 - Expecting all parts at dealer tomorrow. Sonnenberg to rebuild and try out over weekend. Has new software to evaluate. 1/25/05 - Collected sensor data - need new track!!! 1/20/05 - Ride went ok. Igh speed ABS isolation issue (speed sensor related) 1/6/05 - Vehicle is built and debugged. Going to
303	7-Oct-04	ABS	C			3-Feb-05	
							ABS Improvements
							2/3/04 - Closed - covered under item #126 1/6/05 - The turf mode tuning isn't the only issue with ABS performance. The engine braking system on the ATP is also causing a lot of wheel slip that can result in stability issues. 11/18/04 - Vehicle returned from Hayes with electrical issues. ABS is functional again. Expect to get data next week
304	7-Oct-04	ABS	C			6-Jan-05	
							ATV Foundation Brake Upgrades
							10/21/04 - Decision by 11/1 10/7/04 - HB foundation brakes on the ATP ?
305	13-Oct-04	Manufacturing	C			21-Oct-04	
							Delphi opinion of Wineman Technologies
							10/21/04 - Forwarded message from Brian Stainforth and Gene Rousseau (Saginaw Steering Systems.)
306	13-Oct-04	Opportunities	C			18-Nov-04	
							Can Delphi share some hub information for potential utility application.
							10/25/04 - Sent spline information to Troy 10/21/04 - Spoke to Steve Baker - reminder. 10/13/04 - Sent e-mail to Sandusky bearing team. 10/13/04 - Can Delphi provide typical hub information to HB

Hayes Brake / Delphi Action Item List											
#	Date Opened	Category	O/C	Original Due Date	Revised Due Date	Date Closed	Priority	Action Item	Update	Responsible	
307	9-Nov-04	Supply Chain	O		11-Mar-05		H	Cost modeling of the Cyclone master cylinder	3/17 - 13.80 with \$142k in Taiwan - 14.40 delivered to HB (guaranteed). DPH was 13.75 with \$1.5M tools. 13.93 out of HB as incremental volume with \$700k tools. 3/3 - HB expecting another quote back on 3/8. HB will contact us next week with more information. 3/3 - Steve supplied material price, but it included painting machining. P. Nelson working on piece.	S. Pfeifenberger	
308	9-Nov-04	Supply Chain	C		17-Mar-05	8-Mar-05	L	Can Delphi share information on labor rates	3/8 - Forwarded response from Steve Davey. 3/2/05 - Again asked Pam for details. 2/3/05 - Asked Attenweiler for details on drum brakes. 1/10/05 - Forwarded cost information from Jimmie. 12/8/04 - Are any components coming back into the US from China? - Truck drums? 12/2/04 - Follow up message to Jimmie	P. Attenweiler	
309	9-Nov-04	Supply Chain	O		18-Feb-05		H	Can Delphi share names of domestic brake component suppliers	2/23/05 - E-mail reminder to D. Lewis 2/15/05 - Topic discussed during exec review. 2/3/05 - Reminder to D. Lewis 11/9/04 - Delphi to recommend 1-2 suppliers for Hayes to evaluate for each of their commodity categories - L. Sears, Gerry Raasch	D. Lewis	
310	9-Nov-04	Supply Chain	O		28-Feb-05		H	Can Delphi offer any support in leveraging common suppliers	3/1/05 - Need list from D. Lewis' buyers to evaluate. 11/9/04 - Delphi to compare prices where Delphi and Hayes use the same supplier, see if we can leverage lower prices - L. Sears	D. Lewis	
311	9-Nov-04	Supply Chain	C			6-Jan-05		Evaluate switch - make recommendations field failures due to corroded contacts	12/1/04 - Hayes EE to contact John for further discussion. 11/23/04 - Forwarded message from John Layman. 11/22/04 - John Layman's analysis: - Very small switch with fine contacts - What is contact coating (we use Rhodium) - Used to light high current brake lamp? If so, initial	Elliott / Layman	
312	18-Nov-04	Off-Road	O		30-Jun-05		M	Build & Demo ABS on a utility vehicle	4/18 - Gator to be picked up by Sonnenberg on 4/26 3/17 - Need to target HB tech ride in August. 3/3 - need to discuss push-button park brake also - Elliott to get Baumgartner involved. Deere priorities for technology is zero adj, pb park, RPC, ABS 1/6/05 - New vehicle coming in at the end of Jan (4wabs, 2wabs, rpc) - costs on different options	J. Elliott	
313	5-Dec-04	ABS	C			23-Mar-04		Allman - recommended trip to Dow to talk about DOT 4/5 and ABS usage, properties, repackaging (label - not for use with ABS systems)	2/5/04 - Forwarded Dow test results to Russ & Bill. 1/22/04 - Message to Gary McIntyre looking for test results. 1/12/04 - Dow Coming fluid foaming test to be run on 1/14. 12/17/03 - Got the DOT specification for fluid humidification. Will run prior to filling brake system	Gary McIntyre (Dow)	
314	5-Dec-04	ABS	C					Altitude simulation	5/19/04 - DOT5 activity on hold. 3/11/04 - Will begin chamber set-up week of 4/5. 2/16/04 - J. Spong working on test fixture. 1/23/04 - MTS called to calibrate chamber. 12/4/03 - Met with George Kuo about hardware requirements. 11/20/03 - Parts received for vacuum box. - Prints in the model shop	Elliott	
315	10-Dec-04	Bicycle	C		31-Jan-05	10-Feb-05	10-Feb-05	M	Bicycle - rear brake noise investigation	2/10/05 - Held review with HB. Sent analysis presentation. 2/3/05 - Proposed review on Feb 10, 2:00pm CST. 1/12/05 - Conference call to review status and next steps. 12/10/04 - Bicycle delivered to Dayton.	M. Riehle